



NTP
National Toxicology Program

Draft NTP Monograph on Health Effects of Low-level Lead: **Exposure**

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Peer Review Meeting
November 17-18, 2011



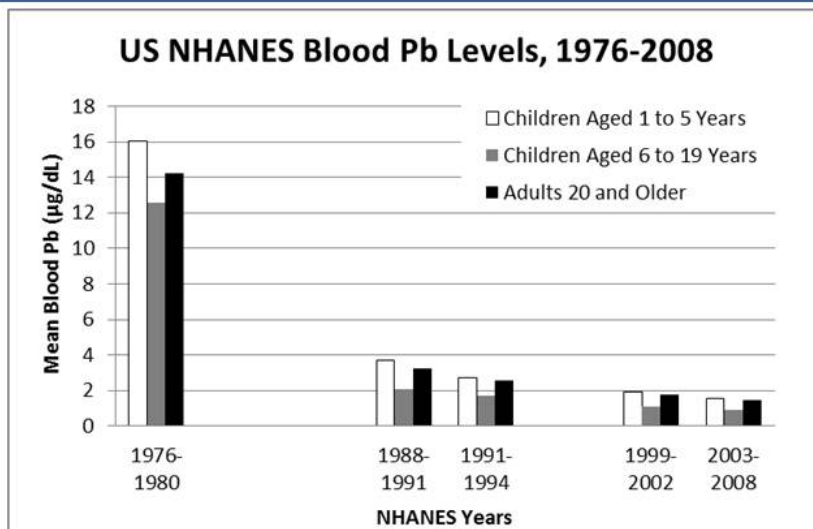


Human Exposure to Pb

- **Federal Reports**
 - EPA's Air Quality Criteria Document for Lead, 2006
 - ATSDR's Toxicological Profile for Lead, 2007
 - CDC's Guidelines for the Identification and Management of Lead Exposure in Pregnant and Lactating Women, 2010
 - CDC's Preventing Lead Poisoning in Young Children, 2005
- **Exposure Section Provides Background**
 - Current blood Pb levels and trends
 - Other Pb biomarkers
 - Sources of environmental Pb
 - Modifiers of Pb exposure



US Blood Pb Levels



- Blood Pb levels in the US have dropped
- Children age 1-5 have higher blood Pb levels



Primary Biomarkers of Pb

- Blood Pb
 - Widely available measure
 - Reflects current and stored Pb exposures
- Bone Pb
 - More difficult to measure
 - Reflects cumulative Pb exposures



Bone Pb Measures

- Half-life of Pb is longer in bones
 - Blood = 1 month
 - Bone = 10-30 years
- 45-70% of blood Pb comes from stored Pb, primarily bone
- Storage and remobilization of bone Pb varies with life stage



Sources of Environmental Pb

- Food
- Water
- Air
- Soil
- Occupational
- Activities that increase exposure
 - Child hand-to-mouth behavior
 - Home renovation
 - Hobbies





Modifiers of Pb Exposure

- Age
- Gender
- Ethnicity
- Diet
- Socioeconomic status
- Recent immigration
- Genetics



A. General Questions

- 1) Is the text in the draft monograph articulated clearly and correctly? Are the summary sections useful? Are the tabular information and format easily understandable? If not, please identify the specific sections that need improvement and provide specific suggestions for improvement.

- 2) Is the information in the draft monograph's text and tables presented objectively? If not, please identify the specific sections that need improvement and provide specific suggestions for improvement.



Exposure Charge Questions

The NTP's goal is to clearly and concisely present issues relevant to low-level Pb exposure in humans and to provide references to more detailed reviews.

- Please comment on whether the draft monograph provides sufficient background on Pb exposure to give context to the evaluation and conclusions for health effects presented in the other sections of the monograph.
- Please comment on the clarity and sufficiency of the discussion of exposures for specific life stages (e.g., childhood or adulthood).